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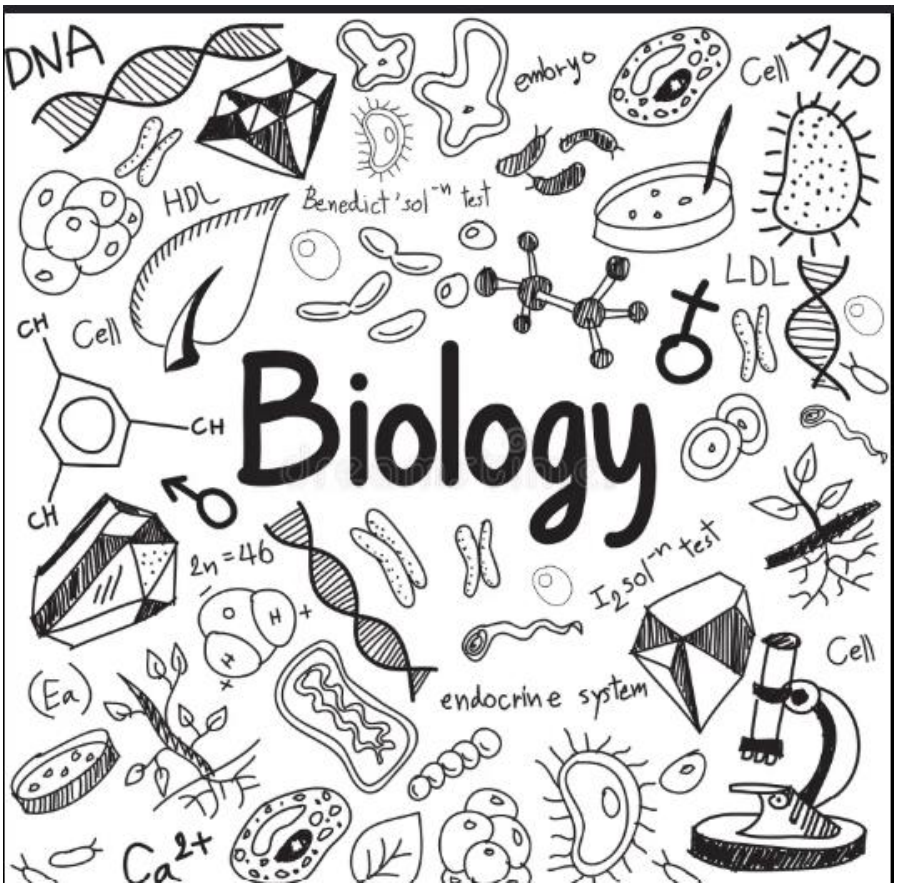
BIOLOGY CLASS 9TH FBISE MCQS



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BIOLOGY

CLASS 9TH

FBISE

MCQS

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BIOLOGY CLASS 9TH (FBISE)
MULTIPLE CHOICE QUESTIONS (MCQS)

1. Analysis of biological data is.....
a) biochemistry
b) biophysics
c) biometry
d) biogeography

2. Choose the correct match pair in the following.
a) rose: zoology
b) cow: microbiology
c) amoeba: botany
d) none of these

3. Kingdom animalia includes:
a) multicellular
b) eukaryotic
c) heterotrophic
d) all of these

4. One of the following is not a macromolecule:
a) glucose
b) sucrose
c) fatty acid
d) protein

5. Genetics is the branch of biology which deals with.....
a) transmission of characters
b) genes
c) inheritance
d) all of these

6. Many organelles constitute.....
a) compounds
b) cell
c) organ
d) tissue

7. The word "bio" means.....
a) life
b) soul
c) matter
d) energy

8. Atom is composed of.....
a) electron
b) proton
c) neutron
d) all of these

9. The cell wall of fungi is made up of:
a) cellulose
b) chitin
c) murein
d) hemicelluloses

10. Choose the correct match pair in the following
a) cell biology: tissue
b) histology: cell division
c) embryology: development
d) all of these

11. The book of Al-Farabi on plants was.....
a) Al-Haywan
b) Kitab-Ul-Haywanat
c) Kitab-Ul-Nabatat
d) Khalaq Ul Insan

12. The interrelationship of biology with other branches of sciences is.....
a) interdisciplinary science
b) biophysics
c) biogeography
d) bioeconomic

13. Percentage composition of calcium (by mass) in organism is:
a) 6
b) 2
c) 9
d) 8

14. The branch of biology which deals with the study of body defense or immune system is:
a) parasitology
b) socio-biology
c) immunology
d) systematic

15. Biology has .....major sub-divisions"
a) two
b) three
c) four
d) ten

16. Birthplace of JABIR-BIN-HAYAN.....
a) IRAN
b) IRAQ

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c) NEPAL
d) SYRIA

17. Morphology is the branch of biology which deals with.....
a) shape
b) forms
c) structure
d) all of these

18. Which of the following cellular organization shows volvox?
a) unicellular
b) multicellular
c) bicellular
d) colonial

19. The word " logos" means.....
a) to thought
b) to reasoning
c) to study
d) all of these

20. Molecules with low molecular weight is called.....
a) light molecule
b) macro-molecule
c) micro-molecule
d) tiny molecule

21. The branch of biology which deals with the microscopic study of tissue.....
a) physiology
b) morphology
c) anatomy
d) histology

22. Which of the following is trace element in protoplasm?
a) Carbon
b) Hydrogen
c) Chlorine
d) Sulphur

23. Book written by Bu-Ali-Sina.....
a) Al-Nabatat
b) Al-Wahoosh
c) Al-Qanun-Fial-Tib
d) none of these

24. The branch of biology which deals with the study of relationship of organisms with their environment is called.....
a) ecology
b) socio-biology
c) immunology
d) systematic

25. The branch of biology which deals with the development of organisms is.....
a) ecology
b) taxonomy
c) ethology
d) embryology

26. The number of plants in dessert is scarce. This could be the statement of:
a) social biologist
b) paleontologist
c) biogeographers
d) taxonomist

27. Organisms made up of only one cell are called
a) mono cellular
b) unicellular
c) multicellular
d) colonial

28. Kingdom plantae include.....
a) multicellular
b) eukaryotic
c) photosynthetic
d) all of these

29. The most complex organism on earth is.....
a) fungi
b) human
c) dinosaurs
d) plants

30. The body of organisms are made up of..... Elements.
a) 10
b) 16
c) 20
d) 92

31. Roots and shoots in plants are the examples of
a) organ
b) system
c) individual
d) tissue

32. Percentage composition of trace elements (by mass) in organism is:

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a) 1
b) 3
c) 5
d) 7

33. Entomology is the study of.....
a) immune system
b) microbes
c) drugs
d) insects

34. The cells having same structure and perform similar functions; are called.....
a) system
b) organism
c) organ
d) tissue

35. Choose the incorrect mismatch pair in the following.
a) biology: light
b) botany: plant
c) physiology: functions
d) molecular biology: water

36. The book Mizan Ul Hikma was written by:
a) Bu-Ali Sina
b) Ibn-Ul-Haitham
c) Abdul Malik Asmai
d) Al-Farabi

37. The breakdown of glucose inside the living cell is.....
a) biochemistry
b) biophysics
c) biogeography
d) bioeconomic

38. The word "biology" is derived from two .....words.
a) English
b) Greek
c) Latin
d) Arabic

39. The branch of biology which deals with the study of form, shape and structure is....
a) physiology
b) morphology
c) anatomy
d) histology

40. The study of insects is:
a) entomology
b) parasitology
c) immunology
d) sociobiology

41. The work of forensic biologists is.....
a) care of forest
b) detection of criminals
c) raring of fish
d) breeding of animals

42. In which year Bu-Ali-Sina died?
a) 815ad
b) 828ad
c) 740ad
d) 1037 ad

43. Fungi are heterotrophic because they lack:
a) cell wall
b) mitochondria
c) chloroplast
d) Golgi bodies

44. Botany is the branch of biology which deals with.....
a) animals
b) plants
c) bacteria
d) virus

45. The profession deals with the food crops and animals which are the source of food; is:
a) agriculture
b) aquaculture
c) farming
d) medicine

46. Organisms belong to kingdom protista are:
a) prokaryotic
b) simple eukaryotic
c) complex eukaryotic
d) none of these

47. The profession which deals with the look after of forest is.....
a) farming
b) aquaculture
c) forestry
d) medicine

48. Ants and bees live in social ways this study is
a) sociology
b) socio-biology
c) immunology
d) systematic

49. Water, glucose and amino acids are....

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a) light molecule
b) micro-molecule
c) macro-molecule
d) tiny molecule

50. Closely related phyla are grouped together to form a:
a) family
b) phylum
c) class
d) kingdom

51. Who suggested the clever way to get rid of mosquito and flies?
a) Bu Ali Sina
b) Abu Usman Al Jahiz
c) Al Razi
d) Ibn Ul Haisum

52. Which of the following belong to kingdom fungi?
a) mushrooms
b) Chlamydomonas
c) yeast
d) both a and c

53. Closely related families are grouped together to form a:
a) kingdom
b) phylum
c) class
d) family

54. Kingdom plantae include:
a) multicellular
b) eukaryotic
c) photosynthetic
d) all of these

55. The scientific name of garlic is....
a) Allium cepa
b) Allium sativum
c) Lathyrus odoratus
d) Helinthus annus

56. Bio means life and "diversity" means:
a) variety within a species
b) variety within a species
c) similarity among species
d) both a and b

57. How many species of mammals are endangered in pakistan?
a) 31
b) 41
c) 5
d) 15

58. The species which are in danger of extinction is called....
a) endangered
b) extinct
c) threatened
d) finished

59. According to WWF, since 1947, how much forest area (acres) is converted into non forest area in Pakistan?
a) 151,500
b) 251,500
c) 351,500
d) 400,500

60. The scientific name of chakor (the national bird) is .....
a) Alectoris choker
b) Haubara bustard
c) Olivia Columbia
d) Capra falconeri

61. The scientific name of earth worm is:
a) musca domestica
b) Pieris Rapae
c) Pherethima posthuman
d) Felis domesticus

62. The scientific name of dog is....
a) Canis lupus
b) Canis aurius
c) Canis familiaris
d) Canis domistica

63. Carolus linnaeus classified organisms in two groups which are:
a) plantae and animalia
b) fungi and animalia
c) fungi and protista
d) protista and animalia

64. The scientific name of house fly is:
a) Hystix lecura
b) Felis domesticus
c) Musca domestica
d) Pieris rapae

65. There are 130,000 plants which depend on bees for:
a) photosynthesis
b) pollination
c) germination

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d) oxygen

66. The term biodiversity is derived from:
a) Italian
b) French
c) Greek
d) Persian

67. Fungi differ from plants due to:
a) cell wall
b) mode of nutrition
c) respiration
d) both a and b

68. The family of human is:
a) Hominidae
b) mammalia
c) homo
d) primates

69. The cause of blindness in Indus dolphin is/are
a) deforestation
b) water pollution
c) over hunting
d) all of these

70. Aristotle classified organisms based on:
a) structure
b) habitat
c) cell
d) nature

71. Biologists estimated that today' global biodiversity may consist of more than:
a) 100 million
b) 200 million
c) 150 million
d) 255 million

72. Which of the following is/ are included in kingdom animalia?
a) mushrooms
b) Pinus
c) jellyfish
d) none of these

73. Reptiles and amphibians belong to kingdom:
a) Protista
b) Plantae
c) Animalia
d) Monera

74. What happens after telophase-I?
a) two diploid daughter cells produced
b) four haploid daughter cells produced
c) four diploid daughter cells produced
d) two haploid daughter cells produced

75. The division of cytoplasm is called.....
a) karyokinesis
b) cytokinesis
c) mitosis
d) meiosis

76. What happens in G-I phase?
a) DNA replication
b) increase in cell size
c) preparation for DNA replication
d) both b and c

77. Which of the following cells remain in g0 phase for infinite period?
a) epithelial cells
b) neurons
c) cells of kidney and liver
d) all of these

78. Necrosis may be occurring in tissues or organs due to....
a) exposure to toxin and radiation
b) exposure to heat and trauma
c) lack of oxygen
d) all of these

79. Karyokinesis is further divided into.... Phases.
a) two
b) four
c) eight
d) five

80. The longest sub-phase of interphase is/are...
a) G-I Phase
b) S-Phase
c) G-II Phase
d) M-Phase

81. Meiosis-I comprises of.....stages.
a) two
b) four
c) eight
d) six

82. Cutting, grafting and budding are the example of.....
a) regeneration
b) sexual reproduction
c) asexual reproduction
d) none of these

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83. The programmed cell death is known as.....
a) necrosis
b) apoptosis
c) cell death
d) cell suicide

84. The duration of G-I phase is ranges from....
a) few minutes to several hours
b) few hours to several days
c) few days to several months
d) few months to several years

85. Choose the incorrect match pair in the following options.....
a) mitosis: somatic cells
b) meiosis: germ cells
c) mitosis: number of chromosomes remains constant
d) none of these

86. Those tumors which don't remain in the same place of tissue or organ and spread to other parts are called.....
a) malignant
b) benign
c) cancerous
d) both a and c

87. Mitosis occurs in.....
a) germ cell
b) sperms
c) ova
d) all

88. RNA, ribosomes and enzyme are synthesized during.....
a) G-I phase
b) S-phase
c) G-II phase
d) G0 phase

89. Choose the correct match pair in the following options.....
a) prophase: chromosomes align on equator of the cell
b) metaphase: nucleolus disappear
c) anaphase: chromosomes splits, and chromatid moves to opposite poles
d) telophase: nuclear membrane disappears

90. What happens during prophase-II?
a) nuclear membrane disappears
b) nucleolus disappear
c) spindle fibers formation
d) all of these

91. When chromatids are separated, they are called
a) daughter chromatid
b) daughter chromosomes
c) chromatin
d) tetrad

92. The accidental death of cell is known as...
a) necrosis
b) engulfing
c) apoptosis
d) autophagy

93. Which of the following statements are true about homologous chromosomes.....
a) they are identical
b) they pair up during meiosis
c) one partner of homologous pair moves to each daughter cell
d) all of them

94. At chiasmata, the non-sister chromatids exchange their parts. This process is .....
a) tetrad formation
b) synapse
c) chiasmata
d) crossing over

95. Walther flamming was.....
a) German biologist
b) French physician
c) Russian zoologist
d) Italian botanist

96. Choose the correct match pair in the following options.....
a) mitosis: two haploid cells
b) meiosis: two haploid cells
c) mitosis: four diploid cells
d) meiosis: four haploid cells

97. Choose the correct sequence of phases of meiosis-I.....
a) prophase-I---metaphase-I----telophase-I-----anaphase-
b) prophase-I-----anaphase-I----telophase-I----- metaphase-I
c) prophase-I-----telophase-I--metaphase-I-----anaphase-I

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d) prophase-I--metaphase-I-anaphase-I----telophase-I

98. Choose the incorrect match pair in the following options.....

a) S-phase: DNA duplication
b) G-I- phase: tubulin production for spindle fibers
c) G-II phase: ribosomes formation
d) G-II phase: RNA synthesis

99. If 2n= 18, for a particular cell, then chromosome number in egg cell after meiosis would be.....

a) 36
b) 18
c) 8
d) 9

100. Many cells stop dividing, this phase is known as

a) G-I phase
b) S-phase
c) G-II phase
d) G0 phase

101. How necrotic cells begin to die?

a) holes appear in plasma membrane
b) intracellular materials spill out
c) they swell up
d) all of these

102. Spindle fibers formation is completed during...

a) early prophase
b) metaphase
c) late prophase
d) anaphase

103. During which stage of meiosis do chromosomes have least amount of DNA?

a) prophase-I
b) prophase-II
c) telophase-I
d) telophase-II

104. Choose the incorrect match pair in the following options.....

a) prophase-I: crossing over
b) prophase-I: chiasmata formation
c) metaphase-I: homologous chromosomes align at equator
d) anaphase-I: synapse

105. During cytokinesis in animal cell, the cleavage furrow is formed by.....

a) microfilament
b) spindle fibers
c) microtubules
d) centriole

106. Chromosome structure can be observed best during.....

a) anaphase
b) metaphase
c) prophase
d) none of these

107. The number of cells that are destroyed in adults by apoptosis are.....

a) 20 to 35 billion cells
b) 50 to 70 billion cells
c) 10 to 20 billion cells
d) 15 to 25 billion cells

108. Spindle fibers break down in.....

a) early anaphase
b) metaphase
c) late anaphase
d) telophase

109. Which of the following cells died during apoptosis?

a) healthy cells
b) abnormal cells
c) unwanted cells
d) all of these

110. Choose the incorrect match pair in the following options.....

a) programmed cell death: necrosis
b) accidental cell death: necrosis
c) cell death due to disease: necrosis
d) cell death due to injury: necrosis

111. The number of cells is adult organisms is relatively kept constant due to.....

a) necrosis
b) cell division
c) apoptosis
d) both b and c

112. Enzymes needed for DNA replication are synthesized in.....

a) G-I phase
b) S-phase
c) G-II phase
d) G0 phase

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113. When chromosomes are not in pairs as in daughter cells, this un-paired number of chromosomes is called.....
a) tetrad
b) haploid
c) diploid
d) none of these

114. Haploid organisms e.g. Fungi make their gametes by.....
a) mitosis
b) meiosis-i
c) meiosis-ii
d) both b and c

115. The uncontrolled division of cell may lead to...
a) necrosis
b) obesity
c) apoptosis
d) tumor formation

116. Choose the correct match pair in the following options.....
a) interphase: short phase
b) S-phase: DNA duplication
c) G-I phase: tubulin production
d) G-II phase: ribosomes formation

117. The final event of the interphase is.....
a) duplication of DNA
b) enzyme for replication
c) duplication of centriole
d) aggregation of chromatin

118. What is/are the significance of mitosis in the given options?
a) growth
b) repair and regeneration
c) asexual reproduction
d) all of these

119. The pair of homologous chromosomes is classified as.....
a) tetravalent
b) trivalent
c) bivalent
d) covalent

120. Meiosis takes place in....
a) prokaryotic cells
b) eukaryotic cells
c) both
d) none of them

121. Mitosis was first observed by.....
a) Oscar hertwig
b) Walther flaming
c) G. Bateson
d) T. H. Morgan

122. The ova animals including humans, has ..... Number of chromosomes.
a) haploid
b) diploid
c) triploid
d) none

123. The phenomenon of spread of tumor is called...
a) malignant
b) benign
c) metastasis
d) mitosis

124. During Krebs cycle, the coenzyme fad is reduced to.....
a) NADH
b) FADH
c) NADPH
d) both a and b

125. The ultimate source of energy for all living organisms on earth is .....
a) water
b) moon
c) soil
d) sun

126. In the second step of glycolysis, 2 pyruic acids are converted into....
a) 2 formic acids
b) 2 alcohols
c) 2 lactic acids
d) 2 fumaric acids

127. Choose the most likely correct match pair in the following options.....
a) photosynthesis: energy releasing
b) photosynthesis: energy storing
c) respiration: energy storing
d) all of these

128. Choose the most likely incorrect match pair in the following options.....
a) CO_2: enters granum
b) CO_2: enters stroma
c) CO_2: enters thylakoids
d) both a and c

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129. Choose the most likely correct match pair in the following options.....
a) alcoholic fermentation: co2
b) lactic acid fermentation: co2
c) alcoholic fermentation: ethanol-
d) both a and c

130. The energy capturing and storing process is...
a) gaseous exchange
b) osmosis
c) decomposition
d) photosynthesis

131. Choose the most likely correct match pair in the following options.....
a) glucose: 5 carbon compound
b) pyruic acid: 3 carbon compound
c) glucose: 3 carbon compound
d) pyruic acid: 6 carbon compound

132. Choose the most likely incorrect match pair in the following options.....
a) light reflected by chlorophyll: blue
b) light reflected by chlorophyll: red
c) light reflected by chlorophyll: green
d) both a and c

133. Choose the most likely correct match pair in the following options about krebs cycle.....
a) pyruic acid: changes into lactic acid
b) NAD: reduces to NADH
c) FAD: reduces to FADP
d) ADP: changes to AMP

134. Choose the most likely correct match pair in the following options.....
a) plants: lack chloroplast
b) photosynthetic bacteria: lack chloroplast
c) algae: lack chloroplast
d) none of these

135. Choose the most likely correct match pair in the following options.....
a) chlorophyll: blue light
b) chlorophyll: red light
c) accessory pigments: red light
d) both a and b

136. Decrease in temperature below optimum value .....the rate of photosynthesis.
a) speeds up
b) lowers down
c) doesn't affect
d) none of these

137. Choose the most likely correct match pair in the following options about light reaction of photosynthesis.....
a) water molecule: breaks into hydrogen and oxygen
b) NADP: reduces into NADPH
c) ADP + pi: ATP
d) all of these

138. Dark reaction is also known as.....
a) Krebs cycle
b) Calvin cycle
c) Glycolysis
d) ETC

139. Life processes are impossible with
a) reduction only
b) decomposition only
c) photosynthesis only
d) oxidation-reduction

140. Which portion of sunlight is/are reflected by chlorophyll?
a) red
b) green
c) blue
d) both a and c

141. Light energy is converted by plant into.....
a) kinetic energy
b) chemical energy
c) heat energy
d) all of these

142. In aerobic respiration, organic food is completely broken down into.....
a) water
b) lactic acid
c) CO2
d) both a and c

143. Where lactic acid fermentation occurs?
a) many microorganisms
b) plants and algae
c) muscle cells
d) both a and c

144. The byproduct of photosynthesis is/are.....
a) glucose, oxygen and water
b) glucose and oxygen
c) glucose only
d) oxygen

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145. Choose the most likely incorrect match pair in the following options about electron transport chain.....
a) NADH: oxidizes
b) NAD: reduces to NADH
c) FADH: reduces
d) all of these

146. Choose the most likely correct match pair in the following options.....
a) light reflected by chlorophyll: blue
b) light reflected by chlorophyll: red
c) light reflected by chlorophyll: green
d) both a and c

147. The concentration of co2 in plants decreases due to.....
a) opening of stomata
b) closing of stomata
c) absorption of water
d) none of them

148. Choose the most likely correct match pair in the following options.....
a) light reaction of photosynthesis: stroma
b) dark reaction of photosynthesis: stroma
c) light reaction of photosynthesis: mitochondria
d) dark reaction of photosynthesis: granum

149. How many ATP molecules are produced from one glucose molecule in glycolysis?
a) two
b) three
c) four
d) six

150. Choose the most likely correct match pair in the following options.....
a) oxidation: gain of o2
b) oxidation: gain of h2
c) reduction: loss of electron
d) reduction: loss of h2

151. Dark reaction occurs in.....of chloroplast.
a) Thylakoids
b) Grannum
c) Stroma
d) Membrane

152. Choose the most likely incorrect match pair in the following options.....
a) aerobic respiration: O2 is needed
b) aerobic respiration: CO2 is needed
c) anaerobic respiration: O2 is needed
d) both b and c

153. In dark reaction of photosynthesis, which of the following produces energy?
a) CO2
b) NADPH
c) ATP
d) O2

154. Centrioles occur only in the cells of:
a) prokaryotes
b) unicellular
c) plant
d) animal

155. Which of these materials is not a component of the plasma membrane?
a) lipids
b) carbohydrates
c) proteins
d) DNA

156. Which are only found in the heart?
a) smooth muscles
b) skeletal muscles
c) smooth muscles
d) cardiac muscles

157. Smooth endoplasmic reticulum (ser) plays an important role in:
a) cell division
b) protein synthesis
c) lipids formation
d) transport

158. The cells of tissues which lack the ability to divide arc called:
a) embryotic tissues
b) connective tissues
c) muscular tissues
d) permanent tissues

159. _____is present between cell membrane and nuclear membrane.
a) chlorophyll
b) nucleoplasm
c) stroma
d) cytoplasm

160. A cell contains sub-cellular bodies called:
a) Golgi bodies
b) Plastids
c) Organelles
d) Chromosomes

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161. The chloroplast functions in _____
a) photosynthesis
b) protein synthesis
c) DNA replication
d) ATP synthesis

162. Powerhouse of the cell is
a) Ribosomes
b) Golgi apparatus
c) Mitochondria
d) Endoplasmic reticulum

163. Found only in plant cells:
a) mitochondria
b) centrioles
c) plastids
d) Golgi bodies

164. Example of a connective tissue is:
a) phloem
b) xylem
c) bone
d) muscles

165. Organelle, which performs the function of transport within the cell, is:
a) mitochondria
b) endoplasmic reticulum
c) Golgi bodies
d) centrioles

166. Tissues which are composed of different kinds of cells, performing similar function are called:
a) plant tissue
b) compound tissue
c) animal tissue
d) simple tissue

167. Cell membrane is a_____ permeable membrane.
a) partially
b) selectively
c) differentially
d) all of these

168. Which of these cellular organelles have their own DNA?
a) chloroplast
b) all
c) mitochondria
d) nucleus

169. The only organelle which is found in a prokaryotic cell is?
a) centrioles
b) plastid
c) ribosomes
d) mitochondria

170. _____and_____ are not membrane bounded organelles in a eukaryotic cell.
a) ribosomes and centrioles
b) vacuole and centrioles
c) ribosome and vacuole
d) nucleus and vacuole

171. Ribosomes may be found attached on:
a) smooth endoplasmic reticulum
b) plastids
c) rough endoplasmic reticulum
d) nucleus

172. Cell membrane consists of lipid:
a) single layer
b) bilayer
c) trilayer
d) thin layer

173. Cells walls are found in these organisms, except for _____, which a cell, walls.
a) fungi
b) bacteria
c) plants
d) animals

174. Which of the following is a membrane bounded organelle?
a) ribosomes
b) vacuole
c) chromosome
d) centrioles

175. Intake of liquid inside the cell in the form of vacuole through:
a) phagocytosis
b) pinocytosis
c) exocytosis
d) hemolysis

176. The basic unit of structure and function of all the living organisms is:
a) organ
b) cell
c) tissue
d) nucleus

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177. Centrioles help in the manufacturing of:
a) spindle fibres
b) hair
c) cilia
d) flagella

178. Cell wall of fungi is made up of:
a) cellulose
b) chitin
c) peptidoglycan
d) murein

179. In the walls of neighboring cells, there are cytoplasmic connections, called:
a) plasmodesmata
b) stomata
c) middle lamella
d) plasma

180. The _____is a major component of plant cell walls.
a) peptidoglycan
b) chitin
c) cellulose
d) cholesterol

181. Rough endoplasmic reticulum is the area in a cell where _____ are synthesized
a) polysaccharides
b) proteins
c) DNA
d) lipids

182. Nucleus is called
a) foot
b) liver
c) hand
d) brain

183. The _____ is the membrane enclosed structure in eukaryotic cells that contains the DNA of the cell.
a) chloroplast
b) nucleus
c) nucleolus
d) mitochondrion

184. Leucoplasts are:
a) colorless
b) greenish red
c) circular
d) yellow

185. Which is the increase in the apparent size of an object, and it is an import factor in microscopy.
a) magnification
b) resolution
c) identification
d) fertilization

186. Animal tissues which are found as outer most layers of a living and tubular parts are:
a) muscle tissue
b) connective tissue,
c) nerve tissue
d) epithelial tissues

187. Golgi vesicles transport secretions outside the:
a) nucleus
b) nucleolus
c) cell
d) cytoplasm

188. Tissues, which can divide are:
a) compound tissues
b) epidermal tissues
c) meristematic tissues
d) phloem

189. Which of the following is a double membrane structure?
a) chloroplast & nucleus & mitochondria
b) nucleus
c) chloroplast
d) mitochondria

190. The mitochondrion functions in_____
a) lipid storage
b) photosynthesis
c) cellular respiration
d) protein synthesis

191. The stacked membrane system in the chloroplast is called:
a) grana
b) cristae
c) stroma
d) ribosome

192. Chromosomes are formed of:
a) protein and glucose
b) protein and DNA
c) DNA and RNA
d) RNA and glucose

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193. The strand of DNA are held together by ..... bond.
a) oxygen
b) hydrogen
c) Sulphur
d) carbon

194. Which of the following is an example of a monosaccharide?
a) Glucose
b) Sucrose
c) Cellulose
d) Starch

195. What is the primary function of lipids in living cells?
a) Providing quick energy
b) Long-term energy storage
c) Building cell walls
d) storing genetic information

196. Proteins are complex polymers made up of which smaller monomer building blocks?
a) Fatty acids
b) Nucleotides
c) Amino acids
d) Monosaccharides

197. Which of the following is a type of nucleic acid?
a) Glycogen
b) Cholesterol
c) Hemoglobin
d) rna

198. What is the three-dimensional shape of a dna molecule?
a) Double helix
b) Single strand
c) Triple helix
d) Circular loop

199. Which nitrogenous base is found in RNA but not in DNA?
a) Adenine
) Uracil
c) Cytosine
d) Guanine

200. According to the base-pairing rule in DNA, which base always pairs with adenine?
a) Cytosine
b) Guanine
c) Thymine
d) Uracil

201. What makes up the backbone (sides) of the DNA ladder?
a) Nitrogenous bases
b) Hydrogen bonds
c) Amino acids
d) Sugar and phosphate groups

202. Which type of RNA carries the genetic code from the DNA in the nucleus to the ribosomes?
a) Messenger RNA (mRNA)
b) Transfer RNA (tRNA)
c) Ribosomal RNA (rRNA)
d) Micro RNA (miRNA)

203. Which type of RNA is responsible for bringing amino acids to the ribosome during protein synthesis?
a) Messenger RNA (mRNA)
b) Transfer RNA (tRNA)
c) Ribosomal RNA (rRNA)
d) Small nuclear RNA (snRNA)

204. Ribosomes, the sites of protein synthesis, are primarily made of which type of RNA?
a) Messenger RNA (mRNA)
b) Transfer RNA (tRNA)
c) Ribosomal RNA (rRNA)
d) Heterogeneous nuclear RNA (hnRNA)

205. The process of synthesizing a mRNA molecule from a DNA template is called:
a) Translation
b) Replication
c) Mutation
d) Transcription

206. In eukaryotic cells, where does the process of transcription take place?
a) Nucleus
b) Cytoplasm
c) Ribosome
d) Golgi apparatus

207. The process of reading the mRNA message and assembling a protein is known as:
a) Transcription
b) Translation
c) Replication
d) Translocation

208. Where does the process of translation occur in the cell?

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a) Nucleus
b) Mitochondrion
c) Ribosome
d) Cell membrane

209. A sequence of three nitrogenous bases on mRNA that codes for a specific amino acid is called a:
a) Anticodon
b) Gene
c) Genome
d) Codon

210. A sequence of three nitrogenous bases on tRNA that complements an mRNA codon is called an:
a) Anticodon
b) Codon
c) Exon
d) Intron

211. Enzymes are biological catalysts. To which group of biomolecules do most enzymes belong?
a) Carbohydrates
b) Proteins
c) Lipids
d) Nucleic acids

212. Which cell organelle is directly responsible for protein synthesis?
a) Lysosome
b) Vacuole
c) Ribosome
d) Nucleus

213. If one DNA strand has the sequence A-T-C, what will be the complementary sequence on the other strand?
a) G-A-T
b) C-T-A
c) A-T-C
d) T-A-G

214. What is the sum of all the chemical reactions that take place within a living organism called?
a) Metabolism
b) Homeostasis
c) Photosynthesis
d) Digestion

215. Which metabolic process breaks down complex molecules into simpler ones, usually releasing energy?
a) Anabolism
b) Homeostasis
c) Photosynthesis
d) Catabolism

216. Which of the following is an example of an anabolic process?
a) Cellular respiration
b) Protein synthesis
c) Digestion of starch
d) Breaking down glucose

217. What type of biological molecule are most enzymes?
a) Lipids
b) Carbohydrates
c) Proteins
d) Nucleic acids

218. What is the specific region on an enzyme where the substrate binds?
a) Catalyst site
b) Substrate site
c) Active site
d) Product site

219. How do enzymes speed up chemical reactions in living cells?
a) By lowering the activation energy
b) By raising the temperature
c) By increasing the amount of substrate
d) By acting as a reactant

220. What happens to most enzymes when the temperature rises significantly above the optimum level?
a) They work much faster
b) They become denatured
c) They freeze
d) They convert into substrates

221. What is the full form of ATP, the primary energy currency of the cell?
a) Adenosine tetraphosphate
b) Adenine triphosphate
c) Adenosine triphosphate
d) Amino triphosphate

222. How is energy released from an ATP molecule for use by the cell?
a) By breaking the bond to the third phosphate group
b) By adding a phosphate group
c) By breaking down the ribose sugar

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d) By absorbing light energy

223. What is the primary goal of cellular respiration?

a) To produce oxygen for the cell
b) To convert food energy into ATP
c) To make glucose from sunlight
d) To digest food in the stomach

224. Where in the cell does glycolysis, the first step of cellular respiration, take place?

a) Cytoplasm
b) Mitochondria
c) Nucleus
d) Cell membrane

225. Which cellular organelle is the site of the Krebs cycle (and the electron transport chain?

a) Chloroplast
b) Ribosome
c) Nucleus
d) Mitochondria

226. Which of the following processes requires oxygen to produce the maximum amount of ATP?

a) Glycolysis
b) Lactic acid fermentation
c) Aerobic respiration
d) Anaerobic respiration

227. What is the ultimate source of energy for almost all life on earth?

a) Geothermal heat
b) ATP
c) Glucose
d) Sunlight

228. What are the three main reactants required for photosynthesis?

a) Oxygen, glucose, and water
b) Glucose, carbon dioxide, and sunlight
c) Carbon dioxide, water, and sunlight
d) Oxygen, water, and carbon dioxide

229. What is the primary pigment used by plants to absorb light energy during photosynthesis?

a) Carotenoid
b) Chlorophyl
c) Xanthophyll
d) Hemoglobin

230. In which organelle does photosynthesis take place?

a) Mitochondria
b) Nucleus
c) Vacuole
d) Chloroplast

231. What are the two primary products of photosynthesis?

a) Carbon dioxide and water
b) Carbon dioxide and oxygen
c) Glucose and oxygen
d) Water and ATP

232. Where do the light-dependent reactions of photosynthesis take place?

a) Stroma
b) Thylakoid membrane
c) Nucleus
d) Cytoplasm

233. How are photosynthesis and cellular respiration related in terms of their primary reactants and products?

a) They use the same reactants and products
b) The products of one process are the reactants for the other
c) Photosynthesis produces energy, while respiration destroys it
d) They both happen in the exact same organelle

234. Which specific plant tissue is responsible for growth at the tips of roots and shoots?

a) Xylem
b) Phloem
c) Epidermis
d) Apical meristem

235. Which simple permanent tissue provides flexible support to young stems and petioles without restraining growth?

a) Parenchyma
b) Collenchyma
c) Sclerenchyma
d) Xylem

236. Which cells in the xylem tissue are primarily responsible for the vertical transport of water?

a) Sieve tubes
b) Companion cells
c) Tracheid and vessels
d) Guard cells

237. Which of the following statements is true regarding transport in the phloem?

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a) It transports water and dissolved minerals upwards.
b) It transports sugars and other organic compounds bidirectionally.
c) It is a one-way transport system from roots to leaves.
d) It is driven primarily by transpiration pull.

238. Which of the following best describes the main function of transpiration in plants?
a) It creates a pulling force for the upward movement of water.
b) It synthesizes food for the plant.
c) It absorbs mineral salts from the soil.
d) It stores excess water in the plant body.

239. How does high atmospheric humidity affect the rate of transpiration in a plant?
a) It increases the rate of transpiration.
b) It decreases the rate of transpiration.
c) It has no effect on the rate of transpiration.
d) It causes the stomata to open wider, increasing transpiration.

240. What happens to guard cells to cause the stomata to open?
a) They lose water and become flaccid.
b) They take in water and become turgid.
c) They deposit a waxy layer to seal the pore.
d) They actively pump carbon dioxide out of the cell.

241. Under which of the following conditions would you typically expect plant stomata to close?
a) During high light intensity in the morning.
b) During severe water stress or drought.
c) When there is a high concentration of carbon dioxide in the air.
d) When the temperature is optimal for photosynthesis.

242. How do mineral ions generally enter the root hairs from the soil?
a) Only by osmosis.
b) Only by simple diffusion.
c) Through active transport requiring energy.
d) By transpiration pull.

243. What structural feature of root hairs greatly increases the surface area for the absorption of water and minerals?
a) They are covered in a thick waxy cuticle.
b) They are made up of hard sclerenchyma cells.
c) They are long, thin extensions of epidermal cells.
d) They contain stomata for gas exchange.

244. What physical process is responsible for the movement of water from the soil into the root hairs?
a) Active transport
b) Osmosis
c) Transpiration
d) Imbibition

245. Which of the following elements is considered a macronutrient that plants need in large amounts?
a) Iron
b) Zinc
c) Nitrogen
d) Copper

246. Which mineral element is a crucial central component of the chlorophyll molecule?
a) Potassium
b) Phosphorus
c) Calcium
d) Magnesium

247. What is a common visual symptom of a plant experiencing nitrogen deficiency?
a) Yellowing of older leaves (chlorosis).
b) purple spots on young leaves.
c) Wilting during the night.
d) Development of thick, woody stems.

248. Why is xylem considered a complex tissue?
a) It is only found in highly evolved flowering plants.
b) It is made of different types of cells working together as a unit.
c) Its function is too difficult for a 9th grader to understand.
d) It transports both water and food simultaneously.

249. What is the primary function of the waxy cuticle found on the surface of plant leaves?
a) To absorb sunlight for photosynthesis.

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b) To transport sugars from the leaves to the roots.
c) To reduce excessive water loss through evaporation.
d) To allow for the exchange of gases.

250. What are hydathodes, and with which process are they associated?
a) Pores in the leaf used for standard transpiration.
b) Specialized pores at leaf margins that release liquid water (guttation).
c) Cells in the root used to absorb minerals.
d) small openings in the stem for gas exchange.

251. In most plants, are stomata more numerous on the upper or lower surface of a leaf, and why?
a) Upper surface, to capture more sunlight.
b) Lower surface, to reduce water loss from direct sunlight.
c) Upper surface, to easily release oxygen during the day.
d) They are evenly distributed on both sides in all plants.

252. According to the pressure flow hypothesis, how are sugars transported in the phloem?
a) By transpiration pull created by the leaves.
b) By root pressure forcing water up the stem.
c) From a source to a sink due to pressure differences.
d) By active transport of water molecules against gravity.

253. Which macronutrient is a vital component of nucleic acids (dna/rna) and atp, in addition to being absorbed from the soil?
a) Magnesium
b) Calcium
c) Phosphorus
d) Iron

254. Which part of the potato plant is commonly used for vegetative propagation?
a) Root
b) Stem (tuber)
c) Leaf
d) Flower

255. What is the primary advantage of asexual reproduction for a plant species?
a) It allows for rapid population increase in stable environments.
b) It produces offspring with high genetic diversity.
c) It allows plants to adapt quickly to new environmental conditions.
d) It makes the plant more resistant to all diseases.

256. The leaves of the Bryophyllum plant can produce new plants. What type of reproduction is this?
a) Sexual reproduction
b) Spore formation
c) Vegetative propagation
d) Binary fission

257. In the artificial propagation method called grafting, the rooted plant that provides the root system is called the:
a) Scion
b) Stock
c) Cutting
d) Layering

258. Which of the following is not an advantage of artificial vegetative propagation?
a) Plants can bear flowers and fruits earlier than those grown from seeds.
b) It ensures the new plants are genetically identical to the parent plant.
c) It increases genetic diversity within the plant population.
d) Seedless plants can be easily grown.

259. What are the male reproductive organs of a flower collectively called?
a) Carpel
b) Stamen
c) Petal
d) Sepal

260. Where are the pollen grains produced in a flower?
a) Stigma
b) Style
c) Anther
d) Ovary

261. Which of the following is not part of the female reproductive organ (pistil) of a flower?

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a) Stigma
b) Style
c) Ovary
d) Filament

262. What is the function of the sepals in a flower?
a) To protect the flower bud before it opens.
b) To produce pollen grains.
c) To attract insects for pollination.
d) To develop into a fruit.

263. A flower that contains both male and female reproductive organs is referred to as:
a) Unisexual flower
b) Bisexual flower
c) Incomplete flower
d) Sterile flower

264. What is the process of transfer of pollen grains from the anther to the stigma called?
a) Fertilization
b) Pollination
c) Germination
d) Seed dispersal

265. Self-pollination involves the transfer of pollen grains from the anther to the stigma of:
a) The same flower or another flower on the same plant.
b) A different plant of the same species.
c) A different plant of a different species.
d) Only a completely different species of plant.

266. Which of the following is a characteristic typically found in wind-pollinated flowers?
a) Brightly colored petals
b) Production of sweet nectar
c) Light and non-sticky pollen grains
d) Strong, sweet fragrance

267. Insect-pollinated flowers usually possess which adaptation to ensure pollination?
a) Extremely long stamens hanging outside the flower
b) Sticky pollen grains that attach to insect bodies
c) Very small, dull, and inconspicuous petals
d) Unscented flowers

268. What is the transfer of pollen from the anther of one flower to the stigma of a different plant of the same species called?
a) Self-pollination
b) Cross-pollination
c) Vegetative propagation
d) Fertilization

269. What structure grows out of a pollen grain after it lands on a compatible stigma?
a) Pollen grain
b) Pollen tube
c) Style
d) Ovule

270. In flowering plants, what does the fertilized egg (zygote) develop into?
a) Fruit
b) Endosperm
c) Embryo
d) Ovule

271. After fertilization, what does the ovule transform into?
a) Seed
b) Fruit
c) Stigma
d) Embryo

272. Which part of the flower swells up and develops into the fruit?
a) Ovule
b) Petal
c) Stamen
d) Ovary

273. What is "double fertilization," a unique characteristic of flowering plants?
a) The process where two pollen grains fertilize a single egg.
b) Fusion of one sperm with the egg, and another sperm with two polar nuclei.
c) The plant is fertilized twice in one year.
d) When an ovule is fertilized by two different pollen grains.

274. What is evolution in biology?
a) The quick changing of an animal into a different species overnight.
b) The process of an individual changing its own body shape during its lifetime.
c) The gradual change in living things over long periods of time.
d) The extinction of all living things on earth.

275. What is a variation in biology?

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a) When all animals of a species look the same.
b) Differences between individuals of the same species.
c) Changes in the weather over a year.
d) The process of learning a new skill.

276. Who was Charles Darwin?
a) A scientist who explained how evolution works through natural selection.
b) The first man to walk on the moon.
c) An artist who painted the mona Lisa.
d) The inventor of the lightbulb.

277. What is natural selection?
a) Humans choosing which animals to breed to get a desired trait.
b) The sudden disappearance of a plant species.
c) A process where only the largest animals survive.
d) The process where organisms best suited to their environment survive and reproduce.

278. What is an adaptation?
a) A random event that destroys a habitat.
b) A special feature or behavior that helps an organism survive in its environment.
c) The process of migrating to a new city.
d) A disease that affects a whole forest.

279. Which of these is an example of a structural adaptation?
a) Birds flying to warmer places in the winter.
b) A camel having long eyelashes to keep out sand.
c) Bears sleeping through the winter (hibernation).
d) A dog barking to warn its owner.

280. Which of these is an example of a behavioral adaptation?
a) A polar bear having thick white fur.
b) A cactus having sharp spines.
c) Geese flying in a V-shape to save energy during migration.
d) A fish having gills to breathe underwater.

281. What is camouflage?
a) A loud noise an animal makes to scare predators.
b) The process of shedding winter fur in the spring.
c) An animal's ability to run extremely fast.
d) An adaptation that allows an animal to blend in with its surroundings.

282. What are fossils?
a) The preserved remains or traces of living things from the past.
b) Plastic models of animals made in factories.
c) Living animals that we see in the zoo today.
d) Modern rocks that have never contained any life.

283. How do fossils help us understand evolution?
a) They show that all animals have always looked the same.
b) They provide a record of how organisms have changed over millions of years.
c) They help us predict tomorrow's weather.
d) They teach animals how to survive in the wild.

284. What are homologous structures?
a) Completely different body parts in the same animal that have no purpose.
b) Body parts that look the same on the outside but have different bone structures.
c) Similar body parts in different species that suggest they share a common ancestor.
d) Structures that only one specific animal has.

285. What is artificial selection?
a) The process in which humans breed plants or animals for specific traits.
b) A natural process where only the fastest animals survive in the wild.
c) The creation of plastic toys in a factory.
d) Animals adapting to their natural habitat over time.

286. Which of these is an example of artificial selection?
a) A white moth surviving in a snowy environment.
b) A plant developing thorns to protect itself from being eaten.

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c) A farmer breeding cows that produce the most milk.
d) A bird migrating to a warmer country.

287. What is an inherited trait?
a) A language that you learn in school.
b) A characteristic passed down from parents to their offspring.
c) A scar you get from an accident.
d) A skill you develop by practicing, like playing football.

288. Why is variation (differences) important for a species?
a) It makes the species weaker and less likely to survive.
b) It ensures every individual looks the same.
c) It helps a species survive if the environment changes.
d) It makes it easier for predators to spot the animals.

289. What is the name of the famous islands where Charles Darwin studied many different animals?
a) The Hawaiian Islands.
b) The Philippine Islands.
c) The Galapagos Islands.
d) The British Isles.

290. What is the meaning of "survival of the fittest" in evolution?
a) Only the animal that can run the fastest survives.
b) The biggest and strongest animal always wins fights.
c) Living forever and never dying.
d) Being the most suited to survive and reproduce in your environment.

291. What is a mutation?
a) A learned habit that is taught to the next generation.
b) A random change in an organism's dna.
c) The death of an entire species.
d) The process of an animal changing color to match the snow.

292. What are vestigial structures?
a) Body parts that are used for flying.
b) Body parts that look the same in all animals.
c) Body parts that have lost their original function through evolution.
d) The most important organs for survival, like the heart and lungs.

293. How does a new species form?
a) When a population changes so much that they can no longer reproduce with the original population.
b) When two completely different types of animals mate, like a cat and a dog.
c) When an animal learns to run slightly faster in its lifetime.
d) When all the members of a group move to a different country.

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ANSWER KEY

1. C	2. D	3. D	4. A	5. D	6. B	7. A	8. D	9. B	10. C
11. C	12. A	13. B	14. C	15. A	16. A	17. D	18. D	19. C	20. C
21. D	22. C	23. C	24. A	25. D	26. C	27. B	28. D	29. B	30. A
31. A	32. A	33. D	34. D	35. A	36. D	37. A	38. B	39. B	40. A
41. B	42. D	43. C	44. B	45. A	46. B	47. C	48. B	49. B	50. D
51. B	52. D	53. C	54. D	55. B	56. A	57. A	58. A	59. C	60. A
61. C	62. C	63. A	64. C	65. B	66. C	67. D	68. A	69. D	70. B
71. A	72. C	73. C	74. D	75. B	76. D	77. B	78. D	79. B	80. A
81. B	82. C	83. B	84. B	85. D	86. A	87. D	88. A	89. C	90. D
91. B	92. A	93. B	94. D	95. A	96. D	97. D	98. C	99. D	100. D
101. D	102. C	103. D	104. D	105. A	106. B	107. B	108. D	109. C	110. A
111. D	112. A	113. B	114. A	115. D	116. B	117. C	118. D	119. C	120. B
121. B	122. A	123. C	124. B	125. D	126. C	127. B	128. D	129. D	130. D
131. B	132. A	133. B	134. B	135. D	136. B	137. D	138. B	139. D	140. B
141. B	142. D	143. D	144. D	145. C	146. A	147. A	148. B	149. A	150. A
151. C	152. D	153. C	154. D	155. D	156. D	157. C	158. D	159. D	160. C
161. A	162. C	163. C	164. C	165. B	166. B	167. B	168. C	169. C	170. A
171. C	172. B	173. D	174. B	175. B	176. B	177. A	178. B	179. A	180. C
181. B	182. D	183. B	184. A	185. A	186. D	187. C	188. C	189. A	190. C
191. A	192. B	193. B	194. A	195. B	196. C	197. D	198. A	199. B	200. C
201. D	202. A	203. B	204. C	205. D	206. A	207. B	208. C	209. D	210. A
211. B	212. C	213. D	214. A	215. D	216. B	217. C	218. C	219. A	220. B
221. C	222. A	223. B	224. A	225. D	226. C	227. D	228. C	229. B	230. D
231. C	232. B	233. B	234. D	235. B	236. C	237. B	238. A	239. B	240. B
241. B	242. C	243. C	244. B	245. C	246. D	247. A	248. B	249. C	250. B
251. B	252. C	253. C	254. B	255. A	256. C	257. B	258. C	259. B	260. C

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261. D	262. A	263. B	264. B	265. A	266. C	267. B	268. B	269. B	270. C
271. A	272. D	273. B	274. C	275. B	276. A	277. D	278. B	279. B	280. C
281. D	282. A	283. B	284. C	285. A	286. C	287. B	288. C	289. C	290. D
291. B	292. C	293. A							